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10/779,948	02/17/2004	Brig Barnum Elliott	03-4044	9353

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Verizon Corporate Services Group Inc.
Mailcode HQE03H14
600 Hidden Ridge Drive
Irving, TX 75038

EXAMINER

TAYLOR, BARRY W

ART UNIT	PAPER NUMBER
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2617

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/779,948

Applicant(s)

ELLIOTT, BRIG BARNUM

Examiner

Barry W. Taylor

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 and 24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 and 24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/17/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

DETAILED ACTION

Claim Objections

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

1. Applicants skipped claim number 23 (see page 28 wherein Applicants skip from claim 23). Therefore, claim 24 should have been originally label "Claim 23".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Sydon et al (2002/0085520 hereinafter Sydon).

Regarding claim 14. Sydon teaches a network comprising:

means for transmitting in a network the includes a plurality of nodes messages using a plurality of modulation schemes (paragraph 0018, 0021, 0025); and

means for receiving a plurality of the messages only during assigned timeslots schemes (paragraph 0018, 0021, 0025).

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Regarding claim 15. Computer claim 15 is rejected for the same reasons as network claim 14 since the recited apparatus would perform the claimed program steps.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 19 is rejected under 35 U.S.C. 102(e) as being anticipated by Sivakumar et al (2005/0018631 hereinafter Sivakumar).

Regarding claim 19. Sivakumar teaches a node comprising (see Bluetooth node in abstract):

at least one transmitter configured to transmit to a destination node using an assigned modulation scheme during a timeslot assigned to the destination node (title, abstract, paragraphs 0003, 0010, 0020, 0024 – 0037, 0038 – 0042) ; and

a plurality of receivers configured to receive a plurality of messages during a timeslot assigned to the node (title, abstract, paragraphs 0003, 0010, 0020, 0024 – 0037, 0038 – 0042) .

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-13, 16-17, 21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sivakumar et al (2005/0018631 hereinafter Sivakumar) in view of Sydon et al (2002/0085520 hereinafter Sydon).

Regarding claim 1. Sivakumar teaches a method of communicating among a plurality of nodes in a wireless network, comprising:

assigning a timeslot to each of the plurality of nodes in the wireless network, the timeslot being a time for a corresponding one of the plurality of nodes to receive messages transmitted by other of the plurality of nodes; assigning a modulation scheme to the each of the plurality of nodes (title, abstract, paragraphs 0010, 0020, 0024 – 0037, 0038 – 0042) .

Sivakumar does not show: transmitting a message from at least one of the other of the plurality of nodes, using the assigned modulation scheme, to at least one destination node within the plurality of nodes, the message being transmitted during a timeslot assigned to the at least one destination node; and receiving, at the at least one destination node, a message from the at least one of the other of the plurality of nodes. Sivakumar does not allow direct communication between slave nodes (see last two lines of paragraph 0020).

Sydon also teaches master node (12 figures 1-3) communication with remote units (14, 16, 18, 20 and 22 figures 1-3) using Bluetooth protocol (paragraphs 0017 - 19). Sydon further teaches direct communication between remote units (paragraphs 0020 - 0023) as well as communication between multiple groups of remote units (paragraphs 0024 - 0026) by using two modulation schemes (see frequency hopping or spread spectrum, paragraphs 0017 - 0018, 0021, 0025).

It would have been obvious for any one of ordinary skill in the art at the time of invention to use two modulation schemes as taught by Sydon into the teachings of Sivakumar in order to employ different modulation schemes to different connections or channels within a wireless network thereby reducing interference while optimizing usage of available frequency spectrum as taught by Sydon (paragraphs 0006, 0007, 0018, 0021, 0025).

Regarding claim 2. Sivakumar teaches the assigning comprises assigning one of a plurality of transmit spreading codes to each of the plurality of nodes (see Title, abstract and Bluetooth protocol used in paragraph 0020).

Regarding claim 3. Sivakumar teaches the assigning comprises assigning one of a plurality of hop sets to each of the plurality of nodes (see Frequency hopping spread spectrum in title, abstract and paragraphs 0001, 0003, 0010, 0020, 0024).

Regarding claim 4. Sydon teaches the assigning comprises assigning a unique transmit spreading code to each of the plurality of nodes (paragraphs 0018, 0021, 0025).

Regarding claims 5-6. Sivakumar does not show communication between slave nodes (see last two lines of paragraph 0020).

Sydon also teaches master node (12 figures 1-3) communication with remote units (14, 16, 18, 20 and 22 figures 1-3) using Bluetooth protocol (paragraphs 0017 - 19). Sydon further teaches direct communication between remote units (paragraphs 0020 - 023) as well as communication between multiple groups of remote units (paragraphs 0024 - 0026) by using two modulation schemes (see frequency hopping or spread spectrum, paragraphs 0017 - 0018, 0021, 0025).

It would have been obvious for any one of ordinary skill in the art at the time of invention to use two modulation schemes as taught by Sydon into the teachings of Sivakumar in order to employ different modulation schemes to different connections or channels within a wireless network thereby reducing interference while optimizing usage of available frequency spectrum as taught by Sydon (paragraphs 0006, 0007, 0018, 0021, 0025).

Regarding claim 7. Sydon teaches orthogonal codes (paragraphs 0021, 0025).

Regarding claim 8. Sydon teaches direct sequence (title, abstract, 0018, 0021, 0025).

Regarding claim 9. Sivakumar teaches ACK messages used (paragraph 0027).

Regarding claim 10. Sivakumar clearly shows hop sets and carrier frequencies (title, abstract, figures 1, 5 and 6) but does not teach node-to-node communication (see last two lines of paragraph 0020).

Sydon also teaches master node (12 figures 1-3) communication with remote units (14, 16, 18, 20 and 22 figures 1-3) using Bluetooth protocol (paragraphs 0017 - 19). Sydon further teaches direct communication between remote units (paragraphs

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0020 – 023) as well as communication between multiple groups of remote units (paragraphs 0024 – 0026) by using two modulation schemes (see frequency hopping or spread spectrum, paragraphs 0017 – 0018, 0021, 0025).

It would have been obvious for any one of ordinary skill in the art at the time of invention to use two modulation schemes as taught by Sydon into the teachings of Sivakumar in order to employ different modulation schemes to different connections or channels within a wireless network thereby reducing interference while optimizing usage of available frequency spectrum as taught by Sydon (paragraphs 0006, 0007, 0018, 0021, 0025).

Regarding claim 11. Sivakumar teaches a network (title, abstract) comprising: a plurality of nodes, each of the nodes having an assigned modulation scheme (see Title, abstract and Bluetooth protocol used in paragraph 0020) and a plurality of receivers configured to receive a plurality of messages during a timeslot assigned to the node (title, abstract, figures 1, 5 and 6, paragraphs 0010, 0020, 0024 – 0037, 0038 – 0042).

Sivakumar does not allow direct communication between slave nodes (see last two lines of paragraph 0020).

Sydon also teaches master node (12 figures 1-3) communication with remote units (14, 16, 18, 20 and 22 figures 1-3) using Bluetooth protocol (paragraphs 0017 - 19). Sydon further teaches direct communication between remote units (paragraphs 0020 – 023) as well as communication between multiple groups of remote units

(paragraphs 0024 –0026) by using two modulation schemes (see frequency hopping or spread spectrum, paragraphs 0017 – 0018, 0021, 0025).

It would have been obvious for any one of ordinary skill in the art at the time of invention to use two modulation schemes as taught by Sydon into the teachings of Sivakumar in order to employ different modulation schemes to different connections or channels within a wireless network thereby reducing interference while optimizing usage of available frequency spectrum as taught by Sydon (paragraphs 0006, 0007, 0018, 0021, 0025).

Regarding claim 12. Sivakumar shows plurality of spread codes, carrier frequencies and plurality of hop sets (title, abstract, figures 1, 5, and 6).

Regarding claim 13. Sivakumar teaches (Bluetooth protocol --- paragraph 0020) having a plurality of spread codes, carrier frequencies, and hop sets (title, abstract, figures 1, 5, and 6).

Regarding claim 16. Sivakumar teaches receiving, by a node in a network during a TDMA timeslot assigned to the node for receiving messages transmitted (title, abstract, paragraphs 0010, 0020, 0024 – 0037, 0038 – 0042).

Sivakumar does not teach direct communication between a plurality of nodes where each of the other nodes transmitting messages to the node during the timeslot assigned to the node, each of the messages being transmitted using a different orthogonal or nearly orthogonal transmit spreading code.

Sydon also teaches master node (12 figures 1-3) communication with remote units (14, 16, 18, 20 and 22 figures 1-3) using Bluetooth protocol (paragraphs 0017 -

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19). Sydon further teaches direct communication between remote units (paragraphs 0020 – 023) as well as communication between multiple groups of remote units (paragraphs 0024 – 0026) by using two modulation schemes (see frequency hopping or spread spectrum, paragraphs 0017 – 0018, 0021, 0025).

It would have been obvious for any one of ordinary skill in the art at the time of invention to use two modulation schemes as taught by Sydon into the teachings of Sivakumar in order to employ different modulation schemes to different connections or channels within a wireless network thereby reducing interference while optimizing usage of available frequency spectrum as taught by Sydon (paragraphs 0006, 0007, 0018, 0021, 0025).

Regarding claim 17. Sivakumar teaches a method for simultaneously receiving a plurality of messages in a wireless network node, the method comprising: receiving, by a node in a network during a TDMA timeslot assigned to the node for receiving messages transmitted (title, abstract, paragraphs 0010, 0020, 0024 – 0037, 0038 – 0042).

Sivakumar does not teach direct communication between the plurality of nodes (see last two lines in paragraph 0020) wherein each of the other nodes transmitting message during the timeslot assigned to the node, each of the messages being transmitted using a different carrier frequency.

Sydon also teaches master node (12 figures 1-3) communication with remote units (14, 16, 18, 20 and 22 figures 1-3) using Bluetooth protocol (paragraphs 0017 - 19). Sydon further teaches direct communication between remote units (paragraphs

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0020 – 023) as well as communication between multiple groups of remote units (paragraphs 0024 – 0026) by using two modulation schemes (see frequency hopping or spread spectrum, paragraphs 0017 – 0018, 0021, 0025).

It would have been obvious for any one of ordinary skill in the art at the time of invention to use two modulation schemes as taught by Sydon into the teachings of Sivakumar in order to employ different modulation schemes to different connections or channels within a wireless network thereby reducing interference while optimizing usage of available frequency spectrum as taught by Sydon (paragraphs 0006, 0007, 0018, 0021, 0025).

Regarding claim 21. Sivakumar teaches different time slots (see figures 1, 5 and 6).

Regarding claim 24. Sivakumar teaches an ad hoc, wireless network (see Bluetooth in abstract, figures 1-6, paragraph 0020), a method of communication amongst said nodes comprising:
assigning a modulation scheme to said each of said plurality of nodes (title, abstract, paragraphs 0010, 0020, 0024 – 0037, 0038 – 0042).

Sivakumar does not show direct communication between the plurality of nodes (see last two lines in paragraph 0020).

Sydon also teaches master node (12 figures 1-3) communication with remote units (14, 16, 18, 20 and 22 figures 1-3) using Bluetooth protocol (paragraphs 0017 - 19). Sydon further teaches direct communication between remote units (paragraphs 0020 – 023) as well as communication between multiple groups of remote units

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(paragraphs 0024 –0026) by using two modulation schemes (see frequency hopping or spread spectrum, paragraphs 0017 – 0018, 0021, 0025).

It would have been obvious for any one of ordinary skill in the art at the time of invention to use two modulation schemes as taught by Sydon into the teachings of Sivakumar in order to employ different modulation schemes to different connections or channels within a wireless network thereby reducing interference while optimizing usage of available frequency spectrum as taught by Sydon (paragraphs 0006, 0007, 0018, 0021, 0025).

5. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sivakumar et al (2005/0018631 hereinafter Sivakumar) in view of Abdesselem et al (2001/0022791 hereinafter Abdesselem).

Regarding claim 18. Sivakumar teaches a method for communicating among a plurality of radios in a wireless network (title, abstract, figures 1-6), the method comprising:
using one of a plurality of transmit spreading codes to transmit a message from a radio to at least one other radios in a wireless network during a timeslot assigned to the at least one other nodes paragraphs 0010, 0020, 0024 – 0037, 0038 – 0042).

Sivakumar does not teach using very short bursts or pulses as defined as UWB (see Ultra-Wideband radio network defined at the top of page 21, paragraph 0081 of Applicants specifications).

Abdesselem also teaches a radio communication system that uses timeslots (Title, abstract, figures 1, 2, 3A, 3B, 4A and 4B). Abdesselem teaches using short burst to allow subscriber terminals to automatically set a frequency correction algorithm thereby resulting in faster synchronization to base stations (paragraphs 0001, 0013, 0019, 0021, 0035, 0037, 0042, 0047, 0056, 0058, 0059, 0062, 0064, 0065).

It would have been obvious for any one of ordinary skill in the art at the time of invention to use short burst as taught by Abdesselem into the teachings of Sivakumar in order to reduce the time necessary for a subscriber stations to synchronize to a cell as taught by Abdesselem (paragraphs 0064, 0065).

6. Claims 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sivakumar et al (2005/0018631 hereinafter Sivakumar) in view of Sydon et al (2002/0085520 hereinafter Sydon) further in view of Dohler et al (2004/0131025 hereinafter Dohler).

Regarding claims 20 and 22. Sivakumar in view of Sydon do not explicitly show same time slots used.

Dohler also teaches Bluetooth environment wherein different modulations schemes used (figure 1, paragraphs 0007, 0028, 0032, 0033, 0040, 0042, 0101, 0103, 0114, 0115 – 0117, 0121). Dohler discloses increases system performance by occupying less time slots wherein Mobile Terminals use same time slot and same frequency (paragraph 0198).

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It would have been obvious for any one of ordinary skill in the art at the time of invention to allow mobile units to use same time slots and same frequencies as taught by Dohler into the Bluetooth environment as taught by Sivakumar in view of Sydon so as to increase system performance by using less total time slots.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry W. Taylor, telephone number (571) 272-7509, who is available Monday-Thursday, 6:30am to 5pm.

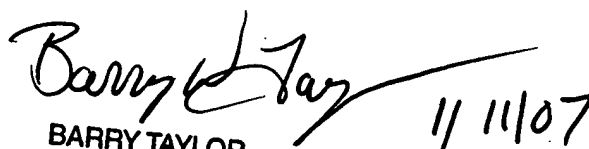
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost, can be reached at (571) 272-7872. The central facsimile phone number for this group is **571-273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (571) 272-2600, the 2600 Customer Service telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Centralized Delivery Policy: For patent related correspondence, hand carry deliveries must be made to the Customer Service Window (now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314), and facsimile transmissions must be sent to the central fax number (571-273-8300).

Barry W. Taylor
Art Unit 2617


BARRY TAYLOR
PRIMARY EXAMINER

11/11/07